

What is claimed is:

1 1. An igniter composition comprising:
2 a fuel component containing at least about 3 composition weight percent
3 and less than 15 composition weight percent of boron, and
4 an oxidizer component containing at least one oxidizer material selected
5 from the group consisting of alkali metal nitrates, alkaline earth metal nitrates and
6 mixtures thereof,

7 wherein the fuel component and the oxidizer component are present in
8 stoichiometrically balanced amounts.

9 2. The igniter composition of claim 1 wherein:
10 the fuel component additionally contains at least one fuel material that
11 produces gas on reaction with the at least one oxidizer material.

12 3. The igniter composition of claim 2 wherein the at least one fuel
13 material that produces gas on reaction with the at least one oxidizer material comprises
14 guanidine nitrate.

15 4. The igniter composition of claim 3 comprising less than about 60
16 composition weight percent guanidine nitrate.

1 5. The igniter composition of claim 4 comprising:
2 at least about 20 composition weight percent guanidine nitrate and no
3 more than about 40 composition weight percent guanidine nitrate.

1 6. The igniter composition of claim 1 wherein the at least one
2 oxidizer material is potassium nitrate.

1 7. The igniter composition of claim 6 wherein potassium nitrate is
2 present in a concentration of at least about 40 composition weight percent and no more
3 than about 85 composition weight percent.

1 8. The igniter composition of claim 7 wherein the fuel component
2 additionally contains at least about 8 composition weight percent guanidine nitrate and
3 less than about 60 composition weight percent guanidine nitrate.

1 9. The igniter composition of claim 8 wherein:
2 the oxidizer component contains at least about 55 composition weight
3 percent and no more than about 75 composition weight percent of potassium nitrate
4 and
5 the fuel component contains,

6 at least about 7 composition weight percent and less than about 10
7 composition weight percent of boron; and
8 at least about 20 composition weight percent and no more than about
9 30 composition weight percent of guanidine nitrate.

1 10. The igniter composition of claim 1 containing less than about 10
2 composition weight percent of boron.

3 11. An occupant restraint system device comprising a housing
4 containing a supply of reactant material, the reactant material including a fuel
5 component containing at least about 3 composition weight percent and less than 15
6 composition weight percent of boron, and an oxidizer component containing at least
7 one oxidizer material selected from the group consisting of alkali metal nitrates,
alkaline earth metal nitrates and mixtures thereof, wherein the fuel component and the
oxidizer component are present in stoichiometrically balanced amounts.

1 12. The occupant restraint system device of claim 11 wherein the
2 housing additionally contains a supply of gas generant material and wherein upon
3 activation of the device the reactant material reacts to produce ignition reaction
4 products which contact at least a portion of the supply of gas generant material to
5 initiate generation of gas thereby.

1 13. The occupant restraint system device of claim 12 wherein the
2 supply of reactant material comprises at least about 20% on a weight basis of the
3 supply of reactant material and the supply of gas generant material combined.

1 14. A seat belt pretensioner comprising the occupant restraint system
2 device of claim 12.

1 15. A micro-gas generator comprising the occupant restraint system
2 device of claim 12.

1 16. The occupant restraint system device of claim 11 wherein the
2 reactant material fuel component contains less than about 10 composition weight
3 percent of boron.

1 17. The occupant restraint system device of claim 11 wherein the
2 reactant material fuel component additionally contains at least one fuel material that
3 produces gas on reaction with the at least one oxidizer material.

1 18. The occupant restraint system device of claim 17 wherein the at
2 least one fuel material that produces gas on reaction with the at least one oxidizer
3 material comprises guanidine nitrate.

1 19. The occupant restraint system device of claim 18 wherein the
2 reactant material comprises less than about 60 composition weight percent guanidine
3 nitrate.

20. The occupant restraint system device of claim 19 wherein the
reactant material comprises:

at least about 20 composition weight percent guanidine nitrate and no
more than about 40 composition weight percent guanidine nitrate.

1 21. The occupant restraint system device of claim 11 wherein the at
2 least one oxidizer material is potassium nitrate.

1 22. The occupant restraint system device of claim 21 wherein
2 potassium nitrate is present in the reactant material in a concentration of at least about
3 40 composition weight percent and no more than about 85 composition weight
4 percent.

1 23. The occupant restraint system device of claim 22 wherein the fuel
2 component additionally contains at least about 8 composition weight percent
3 guanidine nitrate and less than about 60 composition weight percent guanidine nitrate.

1 24. The occupant restraint system device of claim 23 wherein:
2 the reactant material oxidizer component contains at least about 55
3 composition weight percent and no more than about 75 composition weight percent
4 of potassium nitrate and

5 the reactant material fuel component contains,
6 at least about 7 composition weight percent and less than about 10
7 composition weight percent of boron; and

8 at least about 20 composition weight percent and no more than about 30
9 composition weight percent of guanidine nitrate.

1 25. A method of generating gas suitable for use in an occupant
2 restraint system of a motor vehicle, said method comprising:

3 igniting a supply of an igniter composition containing a fuel component
4 containing at least about 3 composition weight percent and less than 15 composition
5 weight percent of boron, and an oxidizer component containing at least one oxidizer
6 material selected from the group consisting of alkali metal nitrates, alkaline earth
7 metal nitrates and mixtures thereof, wherein the fuel component and the oxidizer

8 component are present in stoichiometrically balanced amounts, to form igniter
9 composition reaction products and

10 contacting a supply of a gas generant composition with the igniter
11 composition reaction products to form product gas.

1 26. The method of claim 25 wherein the igniter composition is
2 present in a relative amount of at least about 20% of the supply of the igniter
composition and the supply of the reactant material, on a weight basis.